November 1942

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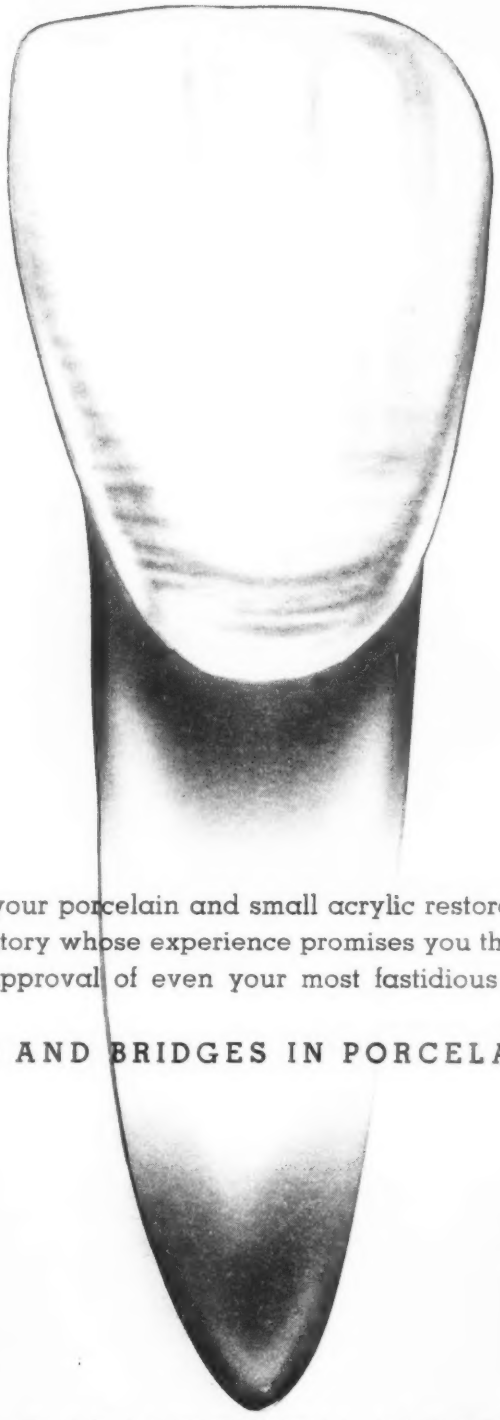

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# "WE MUST BE VIGILANT"...

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Present social trends indicate that Government sponsored medicine and dentistry is a possibility before or after the end of the war.

The Fortune Magazine, in a recent survey, found that approximately seventy-five percent of our people are willing to pay for medical and dental care in the form of taxes. Such a positive expression of opinion may not long go unnoticed. Panel dentistry is functioning in England. The Canadian Dental Association recently proposed a program for the care of children.

Continued indifference or outright refusal to discuss the possibility of socialized dentistry and the factors that may lead to its enactment should now be discouraged.

Because healthy discussion precedes sound planning we welcomed the opportunity to present in TIC two thought-provoking papers under the heading, "What is the Future of Dentistry in America?".

To emphasize our own lack of opinion on all controversial matters, we follow the procedure in each issue of TIC of presenting two diverse views on topics of importance.

Trends should not be disregarded indefinitely. "Socialized dentistry" must not become the "Pearl Harbor" of the profession. There is need for vigilance now!


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# WHAT IS THE FUTURE OF

## Panel Dentistry In England Has Helped The Poorer Classes

Writes W. W. BROWNING
*Hull, England*

Unfortunately, Panel dentistry appears to have resulted in the "blood and Vulcanite era." Instead of preserving the natural teeth as long as possible, the majority of dentists usually extract *all* the teeth and make full dentures. Surprising as it may seem to those unacquainted with the situation, patients seem to like it this way.

For the knowledge of those not acquainted with the workings of Panel dentistry in England, this information may prove interesting. Patients do not receive the benefits of prosthetic treatment immediately after subscribing to the National Health Insurance Plan. Immediate benefits are restricted primarily to operative work.

After the patient has paid premiums to the plan for some time, he or she qualifies for what is known as "Additional Benefit." To obtain these "Additional Benefits" the patient applies to the Secretary of his Approved Society for a "Dental Letter." He can take this "Dental Letter" to the dentist of his own choice.

The dentist then examines the patient's mouth. He notes in the "Dental Letter" the suggested treatment and sends it to the Approved Society. If the Society is satisfied that the treatment is reasonable, the dentist is advised to proceed with the patient.

Generally speaking, the cost of extractions and half of the cost of the dentures are borne by the Society itself. The patient pays the other half of the cost of the dentures. Excluding extras, the cost of a full set of dentures (28 teeth) is, at the present time, approximately six pounds. The dentures, therefore, cost the Society and the patient three pounds each.

The standard of workmanship provided for these dentures is, as a rule, very good. In most instances, Panel patients receive the same type of teeth and workmanship as private patients who pay double *(Continued on page four)*

# DENTISTRY IN AMERICA?

## Pragmatic Dentistry* Indicates A Closer Observation Of Social Trends

Writes WM. HAYES HOYT, D.M.D.
*Professor of Prosthetic Dentistry, Tufts Dental College*
*Boston, Mass.*

All science, in that it enlarges men's knowledge and control of his environment and of his own life, must have some bearing on social institutions. Because it deals with human beings, the social implications of dentistry are direct and obvious. At the close of the last century, social scientists compared actual incomes with the estimated cost of minimum needs, and concluded that a large proportion of the population could not afford even the minimum requirements of a healthy life. Their figures were never disputed, but only recently in our American history was any concerted effort made to remedy this fault. The social scientist was first interested in feeding those of lower privilege and caring for them in their sickness. Dentistry is now well to the forefront in their considerations, and because of its poor distribution through the less privileged levels of society, it has every probability of being the first branch of the health services to be socialized. It is evident, in the light of history, that every essential service will eventually be socialized to some degree, and dentistry, being a necessary service, will certainly be well to the front. No matter how distasteful this may be to the profession, it must be considered as a possibility. If it is undesirable, it won't last, if it is good, it won't harm the profession. The profession, however, must take immediate steps at its earliest sources to make the corrections which will allow a more equitable distribution of dentistry. Man's institutions owe their allegiance to the mass man, not to the individual or to special levels of society. This is dentistry's great problem. No one has the answer, no group of thinkers is capable of a full solution, but we can put the developments of modern society to a fuller use. Here are some observations on the teaching of dentistry, and some suggestions for changes, in the light of accumulated experience.

During the past twenty-five years, in the branch of dentistry which is concerned with mechanical restorations such as crowns, *(Continued on page five)*

*"*Pragmatism is the doctrine that the whole meaning of a conception lies in its practical consequences, and that the purpose of thinking is to develop beliefs which shall serve as general principles of conduct."—Webster.*

continued from page two

the fee or more.

In England, the counties of Yorkshire and Lancashire are more or less wholly industrial. Panel dentistry in these areas may comprise as much as 75% of a dentist's practice. In the South of England Panel dentistry may represent as little as 25% of a man's practice.

National Health Insurance is not available to everybody. It is offered to weekly wage earners with limited income.

Unfortunately, as it is now being handled Panel dentistry has one glaring weakness. A person does not qualify for benefit until reaching the age of 18-20. The teeth of children are attended by Clinics in the schools up to the time of their graduation, usually the age of 14 years. Between the ages of 14 and 18, these youngsters are entirely without treatment facilities unless their parents can afford the fees of private practice. Inasmuch as the teeth suffer abuse most between the ages of 14 and 18, all of the good work done by the free School Clinics is often wasted. This failing in National Health Insurance may be corrected after the War. There does not appear any likelihood of change in the plan at this moment.

A number of our industrial companies have also recognized the importance of the Dental health to their young employees. They have instituted plans of their own. In such instances, dental treatment is given free during the working hours.

To insure skilled treatment and soundly constructed dentures to Panel patients, the Government has appointed Dental Surgeons of experience who are known as "Regional Dental Officers." There are about a half dozen or more Regional Dental Officers. Each man is responsible for the dental treatment in a prescribed area. Cases are referred to these Regional Officers by the Approved Societies and inspections of the dentures and treatments are often made. Dentists may be directed to remake the dentures without charge to the patient if the fit or bite is incorrect.

This observation on the workings of Panel dentistry is purely personal and may be incorrect in fact. Those dentists who have good business sense and who are not afraid of hard work have benefited financially with Panel dentistry. The more conservative practitioners do not appear to have benefited particularly. Usually, they consider the scale of fees much too low.

There is no doubt that the plan, although full of faults, has developed dentistry and given the poorer classes the opportunity to receive dental treatment which would not otherwise be available.

*Panel dentistry has one glaring weakness. The patient does not qualify for benefit until reaching the ages of 18 to 20.*

continued from page three

bridges, dentures, etc., no new principles beyond those practiced by the earliest dentists have been introduced. New methods and techniques have displaced the old as technological and clinical knowledge advanced. These refinements have simplified the teaching of this branch of dentistry, and, together with changes in social conditions and practice methods, have modified unnoticed the necessity of training the embryo dentist so exactingly in purely mechanical procedures. This is not to decry the disciplinary value of such training; but the necessities of modern practice demand other disciplines of more apparent and immediate value to the practitioner and the patient.

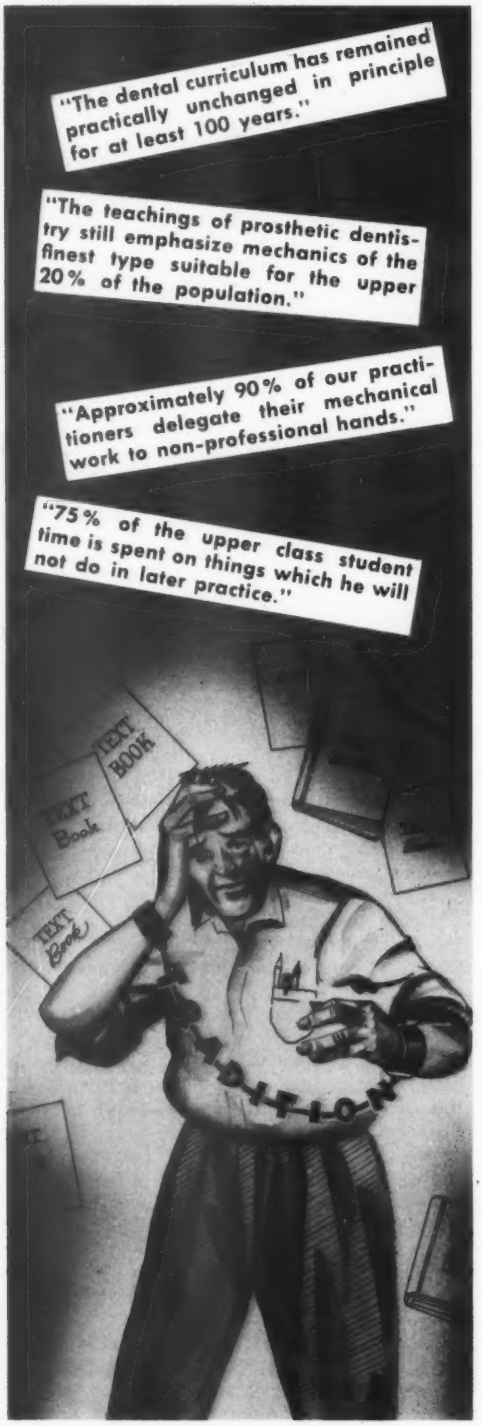
It may be necessary at this point to define the differences of principle and methods as applied to modern dentistry. A simple example, probably common to the knowledge of most laymen, will suffice. Plates become necessary for a patient, and an impression is taken of the mouth. The impression is the fundamental step; the materials and the methods used are secondary. The principle has remained constant, the materials and procedures have modified very rapidly in twenty-five years. Later in this process the relationship of the jaws is recorded; this is another fundamental step, with various methods of determination. Still later the artistic value of the substitute dentures are tested and the cases are processed in vulcanite rubber, or one of the new chemical plastics, and finally adjusted in the mouth of the patient. In this process of making artificial dentures for the patient are to be found a few principles to which this branch of dentistry should direct its efforts. Intermediary steps, such as the plaster casts, occlusal rims, setting the porcelain teeth, and processing the cases in durable material, are mechanical steps which can well be delegated to non-professional hands.

Dental schools, like all educational institutions, try to prepare their students for the present, with the optimistic hope that, as new conditions of life arise, the graduates will have sufficient basic knowledge to adapt themselves to them. It is on the record that they have done so, but in a highly competitive world the student must be trained in methods which he will use during the first years of practice. This demands recognition, on the part of the dental faculties, of changing social conditions and customs which will result in a more rapid curriculum adaptation to the conditions of general practice than has been done in the past. The dental curriculum has remained practically unchanged in principle for at least 100 years. To be sure, new methods are being taught and new subjects added from time to time, but essentially the teaching of modern dentistry has remained the same for years, with little or no adaptation to the changed social life of the American people. The schools still insist that in the application of modern dentistry the practitioner should be a good mechanic of the human body. This is right as far as it goes, but I protest that now is the time to substitute other disciplines of more immediate and superior value to the young practitioner than the long hours of repetitious training in skills which can well be delegated to others.

College faculties cannot foretell the future, but they can observe trends. Whenever a trend seems to demand a modification or even elimination of subject matter and its teaching, the faculty member most interested and concerned must transcend his personal prejudice in favor of a wider outlook. This is a hard thing for any man to do: to subjugate himself and his ideals and prejudices for the common benefit. This is, however, one of the acts that the division of prosthetic dentistry must perform upon itself for the greater benefit of dentistry and of the people. Prosthetic dentistry teachers must not feel hurt at these and the following suggestions, but must accept the challenge of these changes for the greater good of all.

Many dental faculties are confused by the struggle between the old and familiar systems and the newer and seemingly radical practices; radical because they do not agree with previously accepted customs. The practitioner is even more confused. But because he is an individual with no system to defend, he has made a better adaptation to changed conditions than has his Alma Mater. Today, the young graduate soon casts off many of the impediments of his educational development. He has to, if he would survive in this extremely competitive social structure. The practitioner soon learns that he must delegate some things to other people, that he no longer is capable of all knowledge nor of all skills. He becomes too busy with personal essentials to bother with non-essentials.

It can be said without fear of contradiction that no Dental College of any American university is making any effort to correct its teaching to harmonize with and to promote


"The dental curriculum has remained practically unchanged in principle for at least 100 years."
"The teachings of prosthetic dentistry still emphasize mechanics of the finest type suitable for the upper 20% of the population."
"Approximately 90% of our practitioners delegate their mechanical work to non-professional hands."
"75% of the upper class student time is spent on things which he will not do in later practice."
TEXT BOOK
TEXT Book
TEXT Book
TRADITION

total social consumption of its product. Our literature is abundantly overburdened with technical glorification. The student, with a few exceptions, copies the thinking of his master, and the result is a continuation of thinking of human service in terms of mechanics. The teaching of prosthetic dentistry still emphasizes mechanics of the finest type, suitable for the upper 20% of the population. It is natural that the student should be intrigued by this fine artistry, because the men who teach him are masters of the art. But systems of dentistry should be taught with the underlying thought of total social consumption. Since it seems impossible to maintain a high service level and to spread our services to those less fortunate, it becomes incumbent upon dentistry to find methods which will maintain a high service level and still allow greater spread of service. Until research discloses fundamental causes, and technology develops new methods, dentistry must adapt to itself any practices which will maintain our present high service level and give a greater spread.

The CURRICULUM SURVEY OF 1936 called attention to the evident fact that prosthetic dentistry dominated the program from the early exercises in dental materials of the first year to the clinical aspects of the third and fourth years. Of the possible 4,000 clock hours given to the training of a dentist, prosthetic dentistry obtained more than its just share. Other subjects have become as important, if not more, in the last twenty years, and the methods of practice as adopted by the individual dentist indicate the need of curriculum changes.

How, then, is dentistry practiced? What are the trends that have excited changes? What can we do about them?

The COST OF MEDICAL CARE REPORT emphasized a change in public attitudes and the conditions of middle class life. The HOOVER REPORT OF PRESENT SOCIAL TRENDS called, well in advance, many of the conditions of public life which have occurred since; old age pension, social security, wage insurance and health insurance, — in other words, the insistent and insurgent urge of the common man to have for himself some of the benefits of modern life. Historians record the increasing velocity of this movement in the last 100 years. It cannot be stopped.

Dentistry must remould its curriculum in rational accordance with the present trends, and teach dentistry as it is practiced. This calls for some radical changes in the curriculum and the training of auxiliary service

personnel, such as dental technicians and nurses. These suggestions are revolutionary; but they are already in use, so why not recognize the facts? The individual dentist, forced by circumstances and usage, is already using these things, yet his Societies deny them.

Approximately 90% of our practitioners delegate their mechanical work to non-professional hands. We cannot stop it. It is a fundamental change brought about by usage and social economic reasons. Also, it is sound, for by every economic law it will reduce costs eventually; give a greater spread of professional service, since the trained doctor no longer does his own bench work; and develop new outlets for semi-trained personnel such as nurse and technician. These trends are sound because they are the sum of human experience, particularly the delegation of non-personal services to auxiliary hands. Medicine controls in great measure the training of supplementary personnel, such as the nurse, X-ray technician, and pathology laboratory assistants. Dentistry will have to do likewise.

The chief faults lie with the schools which have failed to adapt themselves to new conditions and to train their students to use and direct the auxiliary services. Where is it more evident than in the prosthetic branch of dentistry? This important branch must first feel the impact of change and show the way to a new concept. As now organized, about 75% of the upper-class student time is spent on things which he will not do later in practice. It is admitted that these things have a disciplinary value, but they seriously handicap the teaching of the more important human-relationship side of dentistry. The problem is how to train the dentist to do superlatively well in those arts and practices which only he can render, and to direct all supplementary services. Dentistry has a monopoly. Like all groups in history which have had special privileges, it owes a debt to society. It also must expect to have some of its privileges taken from it by other groups. The smart thing to do is to give way and to control in the giving those systems which are hard to control. The mechanical laboratory phase of dentistry is the best example and the one which gives promise of being the first privilege to be lost.

The problem is how to train the dentist to do superlatively well those arts and practices which only he can render. Therefore, it is evident that purely repetitive manual training as such must be cut to the minimum unless the dental course is increased in length. It is also evident that other branches

To provide which of the following things do you think the federal government should and should not collect enough taxes after the war?

| | Should | Should not | Don't know |
|---|---|---|---|
| **Medical care for everyone who needs it** | 74.3% | 21.0% | 4.75% |
| An old-age pension for every citizen over sixty-five | 73.8 | 21.7 | 4.5 |
| Jobs for everyone who is able and willing to work but cannot get a job in private employment | 67.7 | 25.2 | 7.1 |
| Compensation for everyone unable to find work until he can find work. | 57.8 | 34.4 | 7.8 |

—FORTUNE, July, 1942.

The Canadian Dental Association, at the request of the Dominion Department of Pensions and National Health, prepared an "outline plan for the cooperation of the dental profession in a health insurance arrangement."

—J.A.D.A., Oct. 15, 1942

*College faculties cannot foretell the future but they can observe trends.*

of dental science and art need more time to train the student more adequately, since those branches are more directly concerned with human woes. Surgery and orthodontia are examples of branches which cannot delegate their skills to others since they are vitally concerned with personal relations. Prosthetic dentistry, on the other hand, does have something to give, and thus allows more time for surgery, orthodontia, and general medical information. Manual dexterity will not be sacrificed in this change, for another set of skills is substituted for the old.

After all, dentistry's only excuse for being is to render a service to all the people, and it would be wise if it were to adapt to its use any systems, be they commercial or otherwise, which in any way pertain to its problems. *—Reprinted from "The Tuftonian"*

DENTAL HEALTH
Rise STEADILY ON YOUR JOB KEEP HEALTHY Teeth
188,000 OF US
already lost to our army because of BAD TEETH
COMMUNITY COMMITTEE ON DENTAL HEALTH
CHECK UP!

# How to Interest the Public in DENTAL HEALTH

By RANDOLPH G. BISHOP
Executive Secretary, National Dental Hygiene Association
Washington, D. C.

The problem is not only how to get the public interested in dental health, but also how to keep them interested.

The program requires long-term objectives which reach far beyond possible achievement of the day. At the same time it must have short-term objectives reasonably possible of immediate attainment. Our practical objective in dental health education is to persuade an ever increasing number of our citizens to seek and periodically to continue to seek dental care for themselves and for their children, to make dental treatment reasonably available to them, and to encourage the highest possible standard of professional service for all. To accomplish this objective, an essential requirement is that our appeal be made through the use of language which is easily understood by the type of citizen we seek to reach. At the same time our presentation must be based upon and related to already existing interests of the various groups reached. Too often in health and other types of educational work the material presented has been impressive in its effect upon professional colleagues but

entirely ineffective upon the public at which it was directed. The thoughts, beliefs, and attitudes of individuals are the result of personal experience, associations, and training. The words we use and the channels through which we reach people engaged in one type of endeavor may be entirely different for others.

The dental health problem is so vast that just the thought of trying to reach a hundred million people might easily cause anyone to throw up his hands, if, at the same time, one does not visualize such an effort as a cooperative movement and consider the almost numberless avenues of approach through the utilization of organized and individual support available — support which, up to date, has hardly been tapped in the cause of dental health.

*What are the kinds of education needed?*

(1) Education to interest agencies and organizations in the problem of dental health, including child-caring institutions and foster homes.

(2) Education to stimulate individuals to establish good personal dental health habits and to seek adequate dental care for children. Health education for the individual should be designed for the special group to which it is directed. A popular program should be continuously aimed at the portion of the population that can pay normal dental fees but does not seek dental care. Special groups include the following:

a. Adolescents and young adults — through schools, character-building agencies, church and social groups, industry, Camp Fire Girls, Girl Scouts, Boy Scouts, and similar organizations.

b. School children — through cooperation with public and parochial, elementary, junior and senior high schools, and trade schools.

c. Industrial workers — through cooperation with industrial plants and commercial and industrial unions.

d. Clients of maternal and child welfare agencies — through cooperation with hospitals, clinics, prenatal classes, nursing organizations, and others dealing with this group.

e. Adults — through civic, social, fraternal, and other lay groups. These organizations can also aid in reaching the other groups.

(3) Education needed to prepare leaders and professional workers to promote and participate in dental health programs.

(4) Education needed to encourage gifts and bequests for educational and study programs, employment of dental personnel, purchase of supplies and equipment, provision of service facilities, and more adequate public funds for rehabilitation of the indigent.

*What are the groups we need to reach?*

(1) Citizens of all economic and age levels.

(2) Professional workers, board members, volunteers, and others concerned with the need for dental service.

(3) Members of the dental, medical, nursing, and allied professions; hospital board members; hospital service groups; auxiliary members and others.

*What are the methods of reaching various groups?*

(1) Methods of reaching agencies and organizations should include printed material, radio broadcasts, news stories on significant phases of dental care, qualified speakers for professional and lay groups, visual education of timely significance by popular means, scripts, and transcriptions for use in smaller communities.

(2) Methods of reaching individuals.

a. Adolescents and young adults should be reached by the same methods used to reach agencies and organizations.

b. School children should be reached by school health programs, activities of school physician and public health nurse, school dentist and hygienist, nutritionists, suitable motion pictures and dental literature, poster-making, playlets, etc. Pre-school children should also be reached by encouraging the inclusion of dental examinations, education, the follow-up in connection with the Summer round-up and well child conferences.

c. Industrial workers should be reached through such media as educational literature, posters, motion pictures, and speeches. Employers should help develop programs for dental health education and care for their employees and families.

d. Clients of maternal and child welfare agencies should be reached by pre-natal dental supervision, qualified speakers for workers' groups, parent classes, and educational material for mothers prepared in collaboration with and under the advice of obstetricians and pediatricians.

(3) Methods of reaching leaders and professional workers should include joint medical-dental meetings which will bring out the relationship of dental care to general health, addresses before selected groups or dental societies in explanation of any proposed dental program, improved dental education of nurses in training, addresses before dental hygienists and before open meetings of hospitals and other groups organized for the care of the sick to show need of generalized dental care. When dental or teachers' colleges exist in the community, efforts should be made to interest them in dental health instruction.

(4) Methods of procuring funds should include dramatic graphic material for lay groups concerned with civic and socal problems, for official bodies such as health departments, welfare departments and boards of education; for hospital trustees and for any groups or individuals who may be in a position to create and sustain interest in providing or increasing facilities. Material must be authentic and presented in a convincing manner. It may include charts, slides, or motion pictures, used by effective speakers.

Dental health is of concern to both official and unofficial health, welfare, and character-building agencies working with all age levels. It is of concern to our school systems. It is of concern to a wide variety of lay organizations. It is of concern to citizens generally who make up the great American army of volunteer health and welfare workers. And, of course, it is of interest to the dental and medical professions. A large,

but unknown, number of these agencies and organizations include dental health in their programs, although dental health is seldom a major item in these programs. On the other hand, there are numberless civic, social and fraternal organizations, as well as lay individuals, willing to put their shoulders to the wheel once they understand the importance of dental health action and are provided with concrete suggestions as to what to do and are guided in their efforts. Therefore, if we seek to progress in an effective long-range action program, our efforts must be directed toward the development of mutual understanding and cooperation on the part of all groups. No phase of health work has ever had a better opportunity than has dental health to accomplish these things.

It is at the community level that the major features of dental health education programs must operate. The activities on the state and national levels are assisting and stimulating aids to community programs. A logical first step is the formation of community dental committees made up of representatives of health, welfare, school, lay, professional, and other groups and tied in with some agency permanently set up and financed, like the community chest council of social agencies, county health department, schools, etc.

(1) This will make dental health a community project.
(2) It will provide proper professional and management guidance to dental health programs.
(3) It will aid in avoiding duplication of effort.
(4) It will broaden the dental program to community-wide proportions.
(5) It will be an influential factor in preventing ill-advised programs on the part of any one group.
(6) It will be an invaluable aid in securing appropriations of public funds for dental programs.
(7) It will stimulate and aid the individual programs of the organizations participating.
(8) It will enhance the prestige and importance of dental health in the eyes of the community.

I do not in any way mean to imply that the formation of community dental committees is a solution of the dental health education problem, but I do point to them as an essential first step in getting our houses in order, in securing necessary cooperation in the community and in developing the necessary financial and moral support without which we cannot hope to carry our educational activities into the homes of all citizens.

Those of us who are today working for dental health must become the salesmen who persuade all possible organizations to make dental health a feature of their programs, at the same time telling them how to go about it and provide the working tools. People in general do not like to be lectured, they do not like being "talked down to," and they do not like to feel that someone is trying to educate them. Dental health is a very personal and often sensitive matter. On the other hand, everyone enjoys trying to educate the other fellow, and the people who receive the best education are those whom we enlist to help educate others, although they seldom realize what is happening to them.

No individual can hope to reach an appreciable number of people personally. Therefore, the dental health educator who is charged with responsibility for action programs depends in large measure upon persuading the officers of organizations to translate the message of dental health requirements to their members and enlist their members in carrying it to others.

In every community there are lay organizations concerned with civic, health, and welfare problems. The membership of these organizations runs into many millions. They take an active interest in various phases of health work. They must be persuaded to include dental health education in their programs and, where possible, to *feature* dental health education. Good judgment must guide our requests to lay organizations. Each organization has a specific contribution to make to the cause; there are certain things it can do and others for which it is entirely unsuitable.

The National Dental Hygiene Association seeks to encourage social and civic minded laymen and women to become actively interested in the field of dental health, to the end that they will give support to such worthwhile community programs under way or contemplated as will aid in the advancement of dental health for all the people, and to stimulate all citizens to seek adequate dental care for themselves and for their children. The Association seeks to better the dental health of the American people by working in cooperation with the dental and medical professions, public and private health and welfare agencies, and lay organizations, to promote dental research; encourage the formation of community committees for dental health; develop public appreciation of the importance of dental health and the need for more adequate public support for dental health programs; increase and improve dental health education and treatment programs for children; provide factual literature for lay groups; integrate dental health as a part of and in proper relationship to the general health programs of existing organizations; and carry out educational campaigns and conferences.

Perhaps no profession is better equipped to work with influential members of their communities than are the members of the dental profession. To forego an opportunity to aid in this constructive work, which will be increasingly important and better known among the people with whom he resides and works, would be for every dentist to neglect his real responsibilities. To this end the National Dental Hygiene Association can perform valuable and long needed promotional and assisting services. Such services must eventually play a significant part in conquering the dental maladies of the American people.

Shoreham Building,
Washington, D. C.

## L. C. Thomas, D.D.S.

Ridgefield Park, N. J.

Suggests

(1) Save your towels. Remove stains immediately. For silver nitrate stains—sodium hyposulphite is recommended. For iodine or blood — ammonia water or Javelle water are effective.

(2) Save scarce materials. Instruct your laboratory to return all wax, compound, hydrocolloid, copper bands, etc. and your assistant can clean up this material and put it in re-usable form.

## Wm. E. Newmark, D.D.S.

Drexel Hill, Pennsylvania

Suggests

(3) Flat sided wooden tooth picks may be used to advantage for the placing of silicate fillings. They are ideal for the purpose, easily obtained and inexpensive.

## Juanita F. Rivera, D.H.

Dental Hygienist, C. F. Maristany, D.D.S.
Ponce, Puerto Rico

Suggests

(4) Save your Sterilizer. Add a few drops of glycerine to the distilled water to prevent rust. Clean the sterilizer twice a week and leave it empty over the week-end.

(5) Save your uniform. Use a rubber apron for developing X-rays and working in the laboratory. Keep your rubber apron in a cool place.

# ★ PAGE MUCOSTATIC

One year has passed since Harry Page introduced the Page Mucostatic Impression System in the East and it is very appropriate that some kind words were pronounced by the profession in regard to the Page Mucostatic System. To those of us who were fortunate to study with and learn by Mr. Page's ideas, it has truly been a blessing, especially on those badly recessed mandibles.

Some of the Mucostatic principles are not entirely new to the profession. Drs. Hall, Stansbery, Brock, Colburn and, doubtless, many more have employed the idea of an impression without pressure which is part of the stabilization principle of Mucostatics. Dr. G. H. Wilson, in the 1916 edition of his "Dental Prosthesis," noted the fallacy of atmospheric pressure in denture retention. He wrote:

> "It is a physical impossibility to exclude the film of air between the soft tissues of the mouth and the hard base plate except by substituting a fluid for the film of air. By the substitution of this fluid for the film of air the law of hydrostatics is introduced.[1] The law of hydrostatics is that pressure placed upon a confined liquid is equal in every direction.[2] Therefore, a mechanically perfect adapted denture, having a fluid contact, cannot be retained

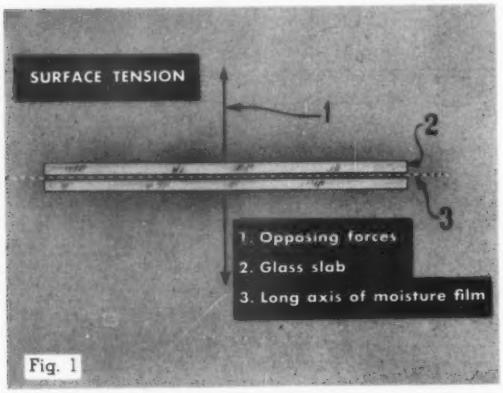


Fig. 1

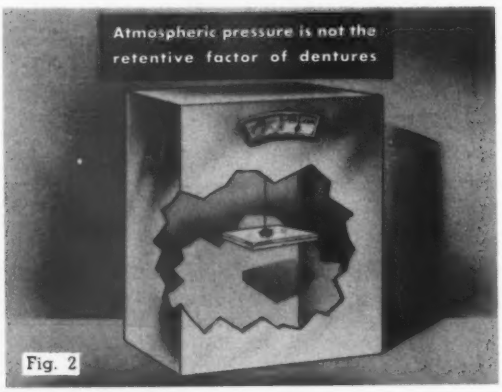


Fig. 2

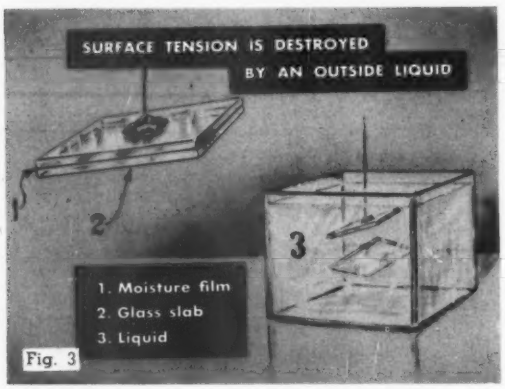


Fig. 3

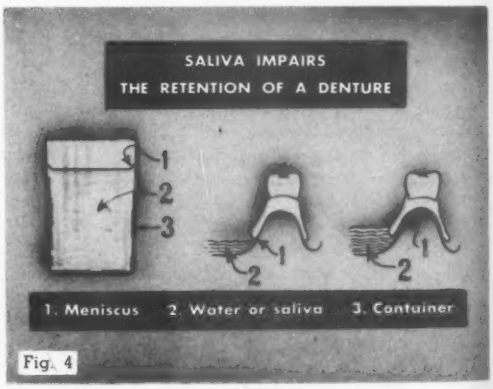


Fig. 4

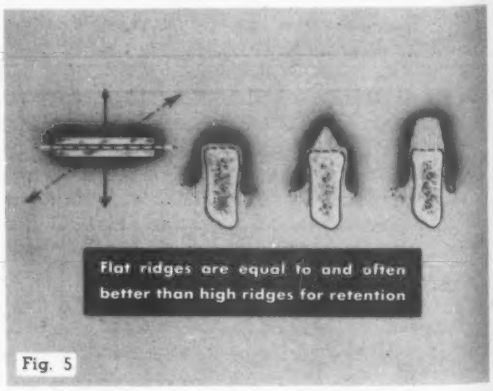


Fig. 5

# IMPRESSIONS . . .

By WM. R. DYKINS, D.D.S.
*Glen Lyon, Pa.*

## Not a technique, but a new thought in Basic principles

by *atmospheric pressure*, because the intervening fluid equalizes, within and without, the *atmospheric pressure.*"

Dr. Wilson inclined to the belief that adhesion, cohesion, or both, were the retentive agents. In many cases these, as well as capillarity, are fairly close synonyms for surface tension *(Continued on page fourteen)*

[1]The law of hydrostatics states that liquids are incompressible except under tremendous loads, soft tissue being approximately 80% liquid therefore is incompressible.
[2]Pascal's law states that any liquid or semi-liquid when enclosed in a rigid container takes on the same shape and rigidity of the container.
From these two laws, two facts stand out.

1. No distinction need be made between hard and soft tissue.
2. If pressure or no pressure is used in taking the impression, stability is obtained only when the base completely contacts the tissue.

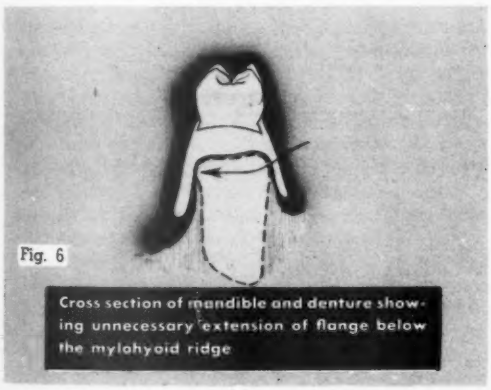
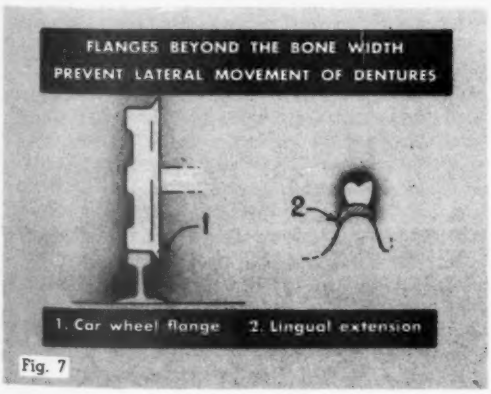


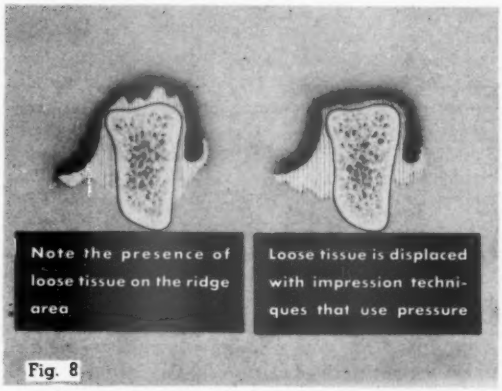
Fig. 6

Cross section of mandible and denture showing unnecessary extension of flange below the mylohyoid ridge




1. Car wheel flange 2. Lingual extension

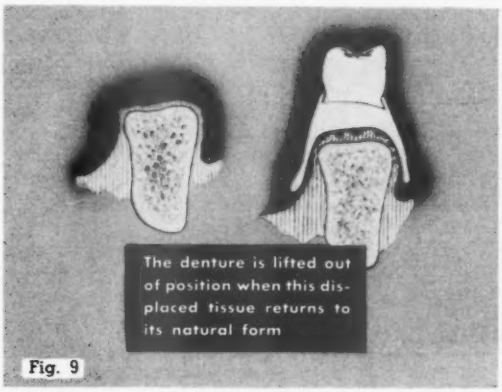
Fig. 7



Note the presence of loose tissue on the ridge area

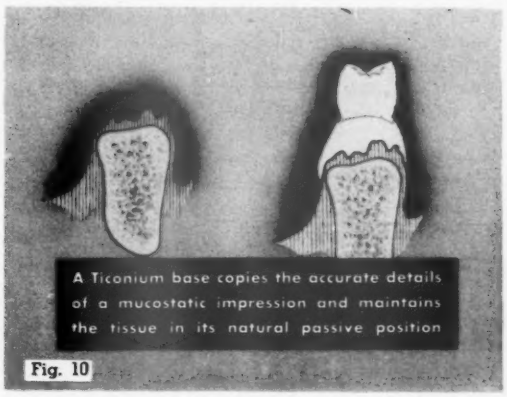
Loose tissue is displaced with impression techniques that use pressure

Fig. 8



The denture is lifted out of position when this displaced tissue returns to its natural form

Fig. 9



A Ticonium base copies the accurate details of a mucostatic impression and maintains the tissue in its natural passive position

Fig. 10

which was shown by Page to be the real retentive factor.

Surface tension is one of the most powerful forces in nature and operates by virtue of a thin moisture film between two closely fitted surfaces, such as two sheets of evenly ground glass (Fig. 1). This tendency operates in a vacuum as well as under normal conditions (Fig. 2). Atmospheric pressure has nothing to do with retention. The retentive factor is fluid surface tension.

Surface tension is inversely as powerful as the thickness of the film and is independent of atmospheric pressure. Its power is seriously impaired and, in a short time, destroyed entirely if its border meniscus is kept in contact with or submerged in similar liquids. Two flat slabs of glass in contact with each other, with a tiny film of moisture between them, will slide back and forth. Try to pull them apart at right angles to their planes. That is the simplest illustration of retention we can find—the surface tension of a film of liquid between two bodily surfaces.

Place those same slabs of glass in water and watch what happens. They come apart easily. (Fig. 3). This illustration has a dental reference. Squirt water around the margins of a denture with good retention. If you then test for retention you will find that it has been lost. Yet that water is on the outside of the denture and not on the inside. Thus, an excess of saliva around the denture periphery will actually cause the surface tension film under the denture to reverse its action and repel the appliance from the tissues with consequent loss of retention.

What happens is easily understood when you watch the meniscus upon water in a glass. Pour water in a glass and you will notice that the surface is not perfectly level; the water curls along the edge of the glass. As water is added, the curl or meniscus, moves up all the time. Saliva, or water, around the edge of a denture also forms a meniscus. As the quantity of saliva or water increases, the meniscus rises and is transferred from the border of the denture inward to a point above the level of the liquid outside that border. When that happens the denture begins to lose retention. (Fig. 4).

Although Dr. Wilson recognized the dubious value of atmospheric pressure in denture retention, he failed to carry the idea to completion. In his next paragraph following the aforementioned, he tries to explain how atmospheric pressure may still be utilized to retain a denture through the medium of a vacuum chamber. The exhaustion of the air in this vacuum chamber is attempted by forceful swallowing on the part of the patient.

Swallowing, forceful or otherwise, could not create a vacuum under the appliance because any reduction in closed mouth pressure would apply equally both outside and inside the denture periphery. Retention is enhanced by swallowing because the act removes the excess saliva outside the denture borders. This allows the surface tension meniscus to return to its protective position at the denture borders and creates a thinner film under the appliance.

Why Wilson permitted the atmospheric pressure idea to confuse him is inexplicable. It remained for Harry Page to recognize the value of surface tension in denture retention and to apply it knowingly and successfully. In the controversy of atmospheric pressure versus surface tension time alone will prove which theory is correct.

With the Mucostatic System we obtain stability and retention in an impression or base without resorting to any tongue, lip or cheek gymnastics. Muscle trimming and extension for seal are ignored. Flat ridges are equal to and often better than high ridges for retention. They present a greater area in which to obtain surface retention (Fig. 5).

Heretofore obtaining stability was never too much of a problem regardless of the technique used in the impression. The basic difficulty with which we were always confronted was the prevention of lift of the denture. Our concept of lift troubles was denture outline and functioning musculature.

When we examine some of the better known techniques, it is apparent that there exists differences of opinion of what constitutes proper lingual outline. For instance, we have the advocates, who teach that the lingual flange should be extended to a contact depth of the floor of the mouth when the tongue is at its mid-low position. Then we have those, who say that the lingual flange should slightly penetrate the sub-lingual space and remain above the mylo-hyoid area. We also have those, who reverse the last mentioned procedure. (Fig. 6).

The extension of the lingual flange beyond the bone width is of little or no importance. All these techniques are successful temporarily (and I use the word temporarily advisedly), when the maximum power of surface tension is developed and the musculature does not offer too much resistance against the denture outline.

The only value the extension of the flange beyond the bone width has, is to give the base lateral stability and prevent movement. One or two millimeters is sufficient extension to prevent lateral movement. There are no

muscles on the ridges except frenum attachments and their relief can be provided for; it is obvious that this base outline offers more freedom for muscle function.

A simple comparison relative to flange extension is the railway carwheel. Here the flange prevents the wheel from rolling off the track while the load is borne by the wheel and track. The same principle holds true with dentures. It is the ridge which carries the load and not extensions into unsupported tissue beyond the bone width. (Fig. 7).

While he was not the first one to sense that it was a problem, Page was the first to actively teach us that when we used impression techniques that displaced tissue we were on the road to failure. (Fig. 8). He was the first to point out that tissue, being semi-liquid, was therefore, elastic. He also made it clear that elasticity does not mean the ability to stretch. It means the ability to return to normal form and position after having been forced out of shape. He showed that tissue, being both elastic and alive would, inevitably, fight to regain and maintain its normal form. When the force used to displace tissue is removed, the tissue resumes its natural position, thereby unseating the denture. (Fig. 9). If the tissue is forcibly held and cannot resume its natural position, it resorbs and the denture becomes unretentive for this reason.

Since Mucostatics demands a highly accurate reproduction of the impression by the denture base, it was, inevitably drawn to the proven accuracy of Ticonium bases, especially in those cases where intricate soft tissue detail must be scrupulously reproduced. In Ticonium we have a base material that faithfully records these all important details thereby promoting solid stability and the utmost in surface tension contact which later results in the extraordinary retention attainable with Mucostatics. (Fig. 10).

Another distinct advantage the Ticonium bases possess for Mucostatics is the thinness with which it may be processed at the denture borders. In Mucostatics this is most important. The average thickness of the metal at the periphery is less than a millimeter. This thinness permits the musculature to function unimpeded directly from its origin or insertion. Taking the fit for granted, this increased functional freedom, especially as applied to the tongue, is one of the first advantages noticed by the patient who acquires a Mucostatic base of Ticonium. By the same token the production of speech becomes automatically easier.

My opinions are based upon the successful results of some seventy odd cases.

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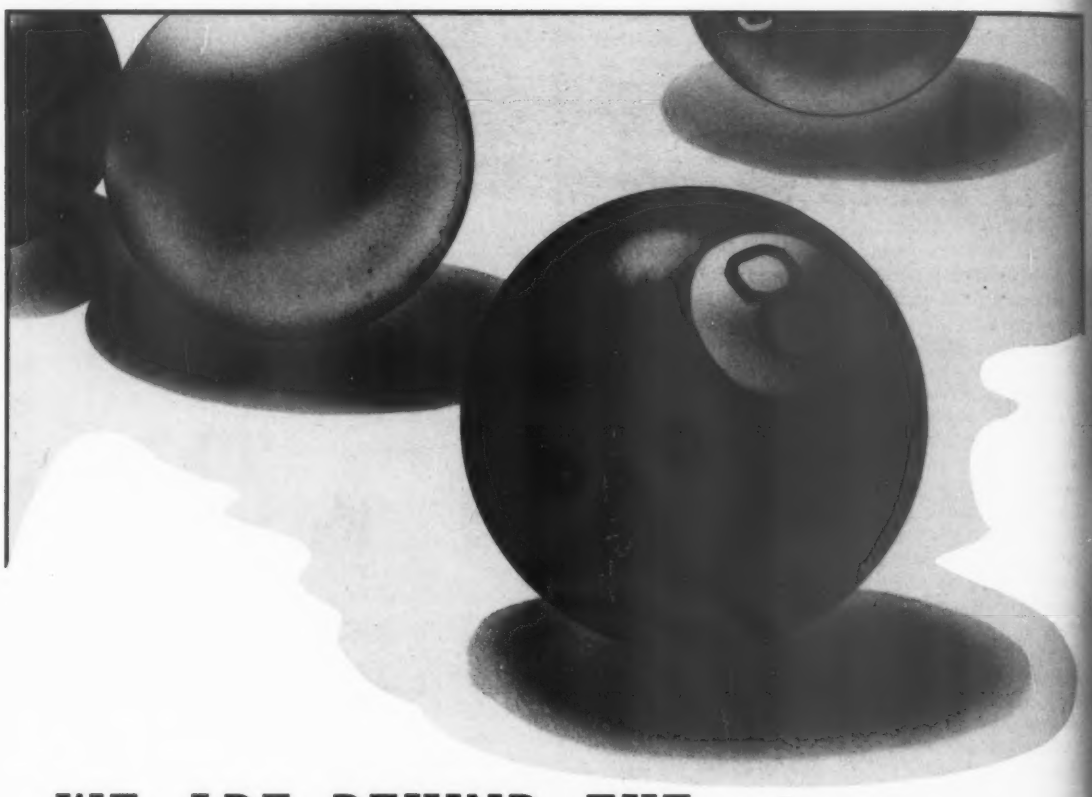

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Wartime conditions make it necessary for us to curtail some of the services which have built this business. It is difficult to obtain messengers. Some of our men have entered the armed services. Materials are usually delayed in reaching us. Rubber tires are strictly rationed. We are working harder and longer than ever.

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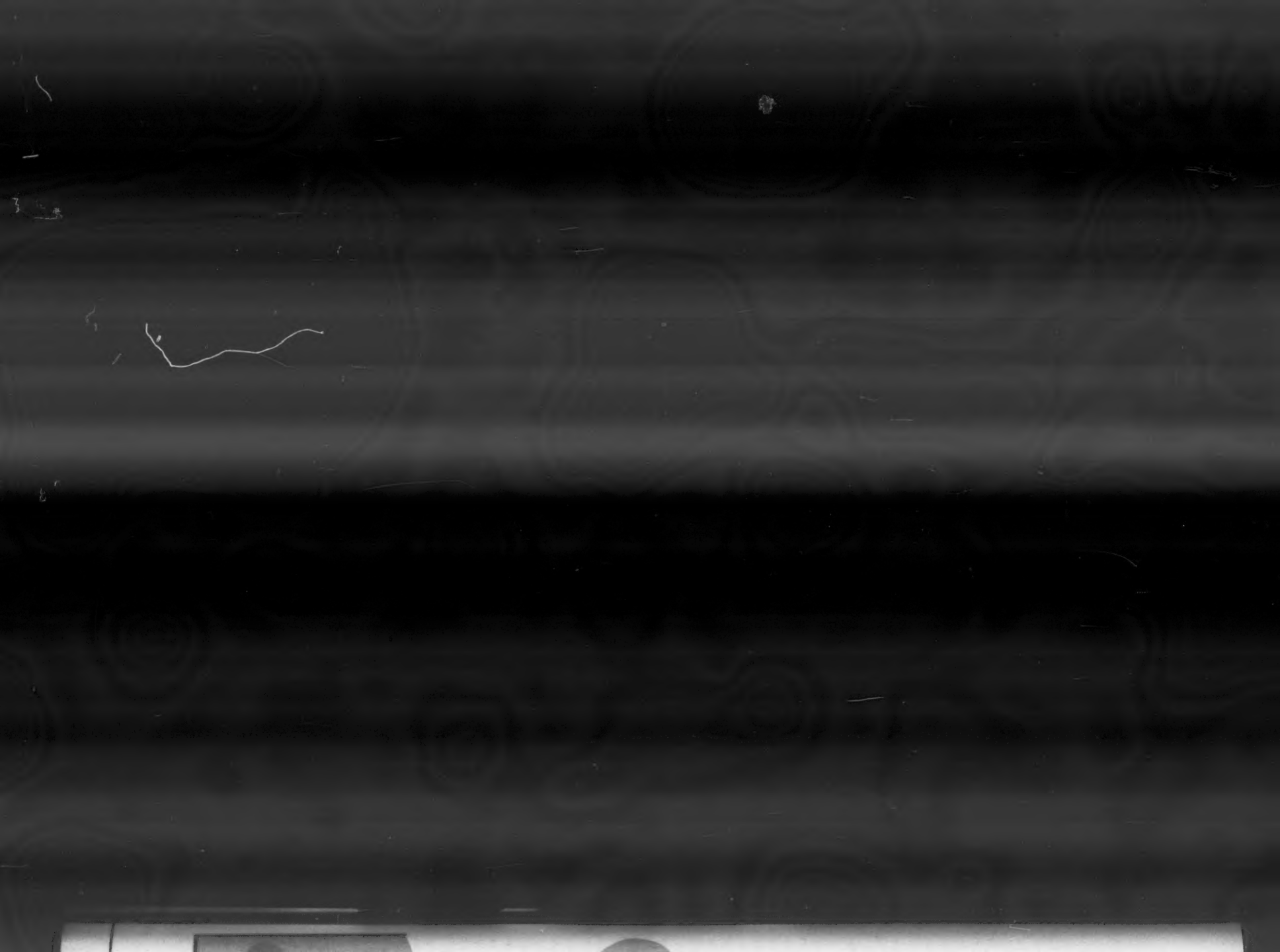
**TIME!**